

so that the plurality of fiber sections having a right-hand curvature and a left-hand curvature are distributed over the optical communications link so that an average torsion of the optical fiber over the optical communications link is about zero,

wherein the optical fiber is wound in a helical shape, alternating with a right-hand and left-hand winding helix, wherein the right-hand and left-hand winding helix includes a right-hand helical winding and a left-hand helical winding so that the right-hand helical winding follows and alternates with the left-hand helical winding, a right length of the right-hand helical winding corresponding to a left length of the left-hand helical winding.

32
19. (Amended) An optical communications link comprising:

an optical fiber for transmitting information, the optical fiber having a plurality of fiber sections, each fiber section of the plurality of fiber sections being configured to have at least one of a right-hand curvature and a left-hand curvature, the optical fiber being bent repeatedly so that the plurality of fiber sections having a right-hand curvature and a left-hand curvature are distributed over the optical communications link so that an average torsion of the optical fiber over the optical communications link is about zero, and

an elastic carrier material, the elastic carrier material being joined to the optical fiber so that a form change of a transmission line is permitted and so that in response to no mechanical load the transmission line retains the optical fiber in its initial curved form, the transmission line configured as a plurality of the optical fibers.

33
21. (Amended) An optical communications link comprising:

an optical fiber for transmitting information, the optical fiber having a plurality of fiber sections, each fiber section of the plurality of fiber sections being configured to have at least one of a right-hand curvature and a left-hand curvature, the optical fiber being bent repeatedly so that the plurality of fiber sections having a right-hand curvature and a left-hand curvature are distributed over the optical communications link so that an average torsion of the optical fiber over the optical communications link is about zero,

a carrier element, the carrier element being an at least one of an elongated carrier element and a cylinder, the optical fiber being wound around the carrier element,

wherein the at least one of the elongated carrier element and the cylinder is flexible.

34
23. (Amended) An optical communications link comprising:

an optical fiber for transmitting information, the optical fiber having a plurality of fiber sections, each fiber section of the plurality of fiber sections being configured to have at least one of a right-hand curvature and a left-hand curvature, the optical fiber being bent repeatedly so that the plurality of fiber sections having a right-hand curvature and a left-hand curvature are distributed over the optical communications link so that an average torsion of the optical fiber over the optical communications link is about zero,

a carrier element, the carrier element being an at least one of an elongated carrier element and a cylinder, the optical fiber being wound around the carrier element, and

a cladding material, the optical fiber being at least one of flush mounted on the carrier element and embedded between the carrier element and the cladding material,

wherein the optical fiber is secured to the carrier element so that the optical fiber is movable and still stabilized on the carrier element.

24. (Amended) An optical communications link comprising:

an optical fiber for transmitting information, the optical fiber having a plurality of fiber sections, each fiber section of the plurality of fiber sections being configured to have at least one of a right-hand curvature and a left-hand curvature, the optical fiber being bent repeatedly so that the plurality of fiber sections having a right-hand curvature and a left-hand curvature are distributed over the optical communications link so that an average torsion of the optical fiber over the optical communications link is about zero, and

a carrier element, the carrier element being an at least one of an elongated carrier element and a cylinder, the optical fiber being wound around the carrier element,

wherein the optical fiber is coiled with an alternating winding direction around one of two carrier elements disposed side-by-side and an even number of the carrier elements disposed side-by-side.

25. (Amended) An optical communications link comprising:

an optical fiber for transmitting information, the optical fiber having a plurality of fiber sections, each fiber section of the plurality of fiber sections being configured to have at least one of a right-hand curvature and a left-hand curvature, the optical fiber being bent repeatedly so that the plurality of fiber sections having a right-hand curvature and a left-hand curvature are distributed over the optical communications link so that an average torsion of the optical fiber over the optical communications link is about zero, and